

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method of protecting and/or strengthening a keratin material comprising applying to said keratin material a composition comprising at least one organometallic compound obtained from at least one metallic precursor chosen from:

at least one metal alkoxide chesen from formulae (la), (lb); (lo), and (ld) below:

 $M \cdot (OR_4)_{n}$ (la)

 $R-M-(OR_1)_{n-1}$ (Ib)

 $(R_4O)_{n-1}-M-R"-M-(OR_4)_{n-1}$ (Ic)

 $RR'-M-(OR_4)_{n-2}$ (Id)

wherein:

- M and M', which may be identical or different, denote- denotes a metal atom chosen from the transition metals of groups Ib to VIIb of the Periodic Table, group VIII of the-Periodic Table, the lanthanide group of the Periodic Table, aluminum, silicon, boron, tin, magnesium, alkali metals and alkaline-earth metals;
- n denotes the valency of the metal;
- R₁, which may be identical or different, is chosen from linear and branched, saturated and unsaturated hydrocarbon-based radicals containing 1 to 30 carbon atoms,
- R and R', which may be identical or different, are is chosen from hydrogen, and linear, branched and cyclic, saturated and unsaturated C₁₋₃₀ hydrocarbon-based radicals, and a cosmetically active group; and



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-R" is chosen from -O-, -NR²-, -S-, linear, cyclic and branched, saturated and unsaturated, C₁₋₃₀ divalent hydrocarbon-based radicals, and a cosmetically active-group, wherein R² is chosen from linear, cyclic and branched, saturated and unsaturated C₁₋₃₀ hydrocarbon-based radicals;

(b) at least one complex chosen from formulae (IIa), (IIb), (IIc) and (IId) below:

$$M-(OR_1)_{n-x}(X)_x$$
 (IIa)

$$R-M (OR_1)_{n-1-x}(X)_x$$
 (IIb)

$$(X)_{x}(R_{1}O)_{n-1-x}M-R"M'-(OR_{1})_{n-1-x}(X)_{x}$$
 (IIc)

$$RR' M (OR_1)_{n \times 2} (X)_{x}$$
 (IId)

wherein:

-M, M', n, R, R', R" and R₄ have the same meaning as above;

- -X is a ligand comprising an atom chosen from nitrogen, phosphorus, sulphur and oxygen; and
- -x is the number of atoms which may link to the central metal-atom;
- (c) at least one metal halide chosen from formulae (IIIa), (IIIb), (IIIc) and (IIId) below:

$$RR'-M-(Z)_{n-2}$$
 (IIId)

-wherein:

- M, M', n, R, R' and R" have the same meaning as above; and
- Z, which may be identical or different, is chosen from a halogen atom; and
 (d) at least one complexes chosen from formulae (IVa), (IVb), (IVc) and (IVd) below:

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- M, M', n, R, R', R", X, x and Z have the same meaning as above;

wherein said cosmetically active group is chosen from a colorant group; a photochromic group; a group for screening out UV-A and/or UV-B radiation; a group for promoting adhesion to keratin materials; a group which facilitates make up removal; a bacterial or bacteriostatic group; a chelating group; a hydroxy acid; a group for preventing hair loss; an antioxidant group; a free-radical-scavenging group; and a vitamin-bearing-group; and

wherein said composition is applied to said keratin material in an amount effective to reduce the brittleness of human nails obtain at least one of harder nails, stronger nails, less brittle nails, nails which no longer split, and nails which no longer crack.

2. (Original) A method according to Claim 1, wherein said at least one organometallic compound is obtained by at least one of partial and total hydrolysis of said at least one metallic precursor and partial and total condensation of said at least one metallic precursor.

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- 3. (Original) A method according to Claim 1, wherein R₁ is chosen from linear and branched, saturated and unsaturated hydrocarbon-based radicals containing 1 to 6 carbon atoms, optionally interrupted by and/or substituted with 1-20 hetero atoms chosen from O, N, S and P.
- 4. (Currenty amended) A method according to Claim 1, wherein R and R', which may be identical or different, are chosen from hydrogen, and linear, branched and cyclic, saturated and unsaturated C₂₋₂₀ hydrocarbon-based radicals, optionally substituted and/or interrupted with 1-20 hetero atoms chosen from O, N, S and P.

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7. (Currently amended) A method according to Claim 1, wherein at least one of R₇-R', and R", which may be identical or different, are is substituted with at least one substituent chosen from a halogen atom, -NR₂, -CO-NR₂, -SR, -R-S-R, -CO₂R, -COR, -OH, -N=C=O, -NR-CO-NR₂, -N⁺R₃, -S⁺=C (NR₂)₂; sulphonate (-SO₃R);

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wherein R, which may be identical or different, are chosen from hydrogen and linear, branched and cyclic, saturated and unsaturated, C₁₋₃₀ hydrocarbon-based radicals.

8. - 9. (Cancelled)

10. (Original) A method according to Claim 1, wherein said amount is effective to at least one of quickly and durably improve the rigidity of said keratin material and quickly and durably improve cohesion of said keratin material.

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- 11. (Original) A method according to Claim 10, wherein said amount is effective to quickly and durably improve the rigidity of said keratin material.
- 12. (Original) A method according to Claim 10, wherein said amount is effective to quickly and durably improve the cohesion of said keratin material.
- 13. (Original) A method according to Claim 10, wherein said amount is effective to quickly and durably improve the rigidity and the cohesion of said keratin material.
- 14. (Currently amended) A method according to Claim 1, wherein said keratin material is chosen from the toenails, and the fingernails, the eyelashes, the eyebrows, body hair and head hair.
- 15. 16. (Cancelled).
- 17. (Previously amended) A method according to claim 1, wherein said amount is effective to reduce the brittleness of weakened nails.
- 18. (Original) A method according to Claim 17, wherein said amount is effective to reduce the brittleness of weakened nails chosen from striated nails, cracked nails, soft nails, supple nails, and nails which have a tendency to split.
- 19. 22. (Cancelled)

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- 23. (Original) A method according to Claim 1, wherein said metal atom M is chosen from titanium, zirconium, aluminum, iron, tin, and silicon.
- 24. (Original) A method according to Claim 23, wherein said metal atom M is chosen from titanium and silicon.
- 25. 37. (Cancelled)
- 38. (Currently amended) A method according to Claim 1, wherein said at least one metallic precursor is chosen from:
- -tetramethoxysilane, silicon tetraethoxide, titanium tetraethoxide, tin tetraethoxide; titanium tetraisopropoxide, silicon tetraisopropoxide, tin tetraisopropoxide; tin tetrabutoxide, titanium tetrabutoxide, silicon tetrabutoxide;
- methyltriethoxysilane, methyltrimethoxysilane, mercaptopropyltriethoxysilane,
- 3-aminopropyl-triethoxysilane; and allyltriethoxysilane;
- N-triethoxysilylpropyl N, N, N-tri-n-butylammonium chloride of formula-

 $(C_4H_6)_3N^*CH_2CH_2CH_2Si(OC_2H_6)_3, CI^*$

- N-triethoxysilylpropyl-N, N, N-tri-n-butylammonium bromide of formula-

(C₄H₉)-₃N⁺CH₂CH₂CH₂Si (OC₂H₆)-₃, Br⁻

TN- (trimethoxysilylpropyl) isothiouronium chloride of formula

(NH₂)₂C=S⁺CH₂CH₂CH₂Si(OCH₃)₃,Cl⁻

- (3-glycidyloxypropyl) trimethoxysilane;
- (3-(2-aminoethylamino) propyl) trimethoxysilane;

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- -(3-(2-(2-aminoethylamino) ethylamino) propyl) trimethoxysilane;
- (4-aminobutyl) triethoxysilane;
- -(N-(6-aminohexyl) aminopropyl) trimethoxysilane;
- (N-methylaminopropyl) trimethoxysilane;
- -acetoxymethyltriethoxysilane;
- 3-triethoxysilylpropylurea;
- triethoxysilane
- (3-aminopropyl) methyldiethoxysilane;
- (mercaptomethyl) methyldiothoxysilane;
- -(3-mercaptopropyl) methyldimethoxysilane;
- titanium diisopropoxide bis (triethanolamine) of formula

[(HOCH2CH2) 2NCH2CH2O] 2Ti(OC3H7) 2

- -methyldiethoxysilane, methyldimethoxysilane, allyldimethoxysilane;
- titanium diisopropoxide bis (2, 4-pentanedionate) of formula:

$$H_3C$$
 OiC_3H_7
 OiC_3H_7
 OiC_3H_7

- -zirconium diisopropoxide bis (2, 2, 6, 6-tetramethyl-3, 5-heptanedionate); and
- -bis (2, 4-pentanedionate) titanium-O, O'-bis (exyethyl) aminopropyltriethexysilane.
- 39. (Original) A method according to Claim 1, wherein said composition comprises a sol of said at least one organometallic compound.

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- 40. (Original) A method according to claim 39, wherein said composition comprises 1% to 100% by weight of said organometallic compound sol.
- 41. (Original) A method according to Claim 39, wherein said composition comprises 1.5% to 95% by weight of said organometallic compound sol.
- 42. (Original) A method according to Claim 39, wherein said composition comprises 10% to 90% by weight of said organometallic compound sol.
- 43. (Original) A method according to Claim 39, wherein said composition comprises 12% to 50% by weight of said organometallic compound sol.
- 44. 47 (Cancelled)
- 48. (Currently amended) A process for treating a keratin material which comprises applying to said keratin material a composition comprising at least one organometallic compound obtained from at least one metallic precursor chosen from:

at least one metal alkoxide chosen from formulae- (la); (lb), (lc), and (ld) below:

 $M - (OR_4)_n$ (la)

 $R-M-(OR_1)_{n-1}$ (lb)

(R₄O)_{n-1}-M-R"-M-(OR₁)_{n-1}----(Ic)

RR'-M-(OR₁)_{n-2} (Id

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wherein:

- M and M', which may be identical or different, denote denotes a metal atom chosen from the transition metals of groups Ib to VIIb of the Periodic Table, group VIII of the Periodic Table, the lanthanide group of the Periodic Table, aluminum, silicon, boron, tin, magnesium, alkali metals and alkaline-earth metals;
- n denotes the valency of the metal;
- R₁, which may be identical or different, is chosen from linear and branched, saturated and unsaturated hydrocarbon-based radicals containing 1 to 30 carbon atoms,
- R and R', which may be identical or different, are is chosen from hydrogen, linear, branched and cyclic, saturated and unsaturated, and C₁₋₃₀ hydrocarbon-based radicals, and a cosmetically active group; and
- -R" is-chosen from -O-, -NR²-, -S-, linear, cyclic and branched, saturated and unsaturated, C₁₋₃₀ divalent hydrocarbon-based radicals, and a cosmetically active group, wherein R² is chosen from linear, cyclic and branched, saturated and unsaturated C₁₋₃₀ hydrocarbon-based radicals;

(b) at least one complex chosen from formulae (IIa), (IIb), (IIc) and (IId) below:

$$M-(OR_1)_{n\times}(X)_{\times}$$
 (IIa)

$$R-M (OR_4)_{n-1-x}(X)_x$$
 (IIb)

$$(X)_{x}(R_{1}O)_{n-1-x}M-R''-M'-(OR_{1})_{n-1-x}(X)_{x}$$
 (IIc)

$$RR'-M-(OR_4)_{n+2}(X)_{x}$$
 (IId)

-wherein:

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1300 I Street, NW Washington, DC 20005 202.408.4000 Fax 202.408.4400 www.finnegan.com -M, M', n, R, R', R" and R₄ have the same meaning as above;

 X is a ligand comprising an atom chosen from nitrogen, phosphorus, sulphur and 								
oxygen; and								
-x is the number of atoms which may link to the central metal atom;								
(c) at least one metal halide chosen from formulae (IIIa), (IIIb), (IIIc) and (IIId) below:								
M-(Z) _n (IIIa)								
R-M- (Z) _{n-1} (IIIb)								
(Z) _{n-1}-M-R"-M'-(Z) _{n-1} (IIIc)								
RR'-M- (Z) _{n-2} (IIId)								
–M, M', n, R, R' and R" have the same meaning as above; and								
-Z, which may be identical or different, is chosen from a halogen atom; and								
(d) at least one complexes chosen from formulae (IVa), (IVb), (IVc) and (IVd) below:								
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(X) _x (Z) _{n-1-x} M-R"-M' - (Z) _{n-1-x} (X) _x (IVc)								
RR'-M-(Z) _{n-x-2} -(X) _x (IVd)								
wherein:								
- M, M', n, R, R', R", X, x and Z have the same meaning as above;								
wherein said cosmetically active group is chosen from a colorant group; a								
photochromic group; a group for screening out UV-A and/or UV-B radiation; a group for								
promoting adhesion to keratin materials; a group which facilitates make-up removal; a								
bacterial or bacteriostatic group; a chelating group; a hydroxy acid; a group for								

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preventing hair loss; an antioxidant group; a free-radical-scavenging group; and a vitamin-bearing group; and

wherein said composition is applied to said keratin material in an amount effective to reduce the brittleness of human nails.

49. - 55. (Cancelled)

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